

[Sequence Listing]

<110> Takeda Chemical Industries, Ltd.

<120> Body weight gain inhibitor

<130> P02-0149PCT

<150> JP2001-403260

<151> 2001-12-28

<150> JP2002-93096

<151> 2002-03-28

<160> 150

<210> 1

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 1

atcgattaca atgcaggccg ctgggcaccc ag 32

<210> 2

<211> 32

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 2

actagtgccc ttcagcaccg caatatgctg cg 32

<210> 3

<211> 1023

<212> DNA

<213> Human

<400> 3

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atcgattaca atgcaggccg ctgggcaccc agagcccctt gacagcaggg gctccttctc 60
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gtcctacgtc atcaccagcc tcagctacgc caactcgtg ctgaaccctt tcctctacgc 960
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agt 1023

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<210> 4

<211> 333

<212> PRT

<213> Human

<400> 4

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Met Gln Ala Ala Gly His Pro Glu Pro Leu Asp Ser Arg Gly Ser Phe
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Ser Leu Pro Thr Met Gly Ala Asn Val Ser Gln Asp Asn Gly Thr Gly
20          25          30
His Asn Ala Thr Phe Ser Glu Pro Leu Pro Phe Leu Tyr Val Leu Leu
35          40          45
Pro Ala Val Tyr Ser Gly Ile Cys Ala Val Gly Leu Thr Gly Asn Thr

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50 55 60
 Ala Val Ile Leu Val Ile Leu Arg Ala Pro Lys Met Lys Thr Val Thr
 65 Asn Val Phe Ile Leu 70 Asn Leu Ala Val Ala Asp Gly Leu Phe Thr Leu
 Val Leu Pro Val Asn 85 Ile Ala Glu His 90 Leu Leu Gln Tyr Trp Pro Phe
 Gly Glu Leu 100 Leu Cys Lys Leu Val 105 Leu Ala Val Asp His Tyr Asn Ile
 Phe Ser Ser 115 Ile Tyr Phe Leu 120 Ala Val Met Ser Val Asp Arg Tyr Leu
 Val Val Leu Ala Thr Val 135 Arg Ser Arg His Met Pro Trp Arg Thr Tyr
 145 Arg Gly Ala Lys Val 150 Ala Ser Leu Cys Val Trp Leu Gly Val Thr Val
 Leu Val Leu Pro 165 Phe Ser Phe Ala Gly Val Tyr Ser Asn Glu Leu
 Gln Val Pro Ser Cys Gly Leu Ser 185 Phe Pro Trp Pro Glu Gln Val Trp
 Phe Lys Ala Ser Arg Val Tyr Thr Leu Val Leu Gly Phe Val Leu Pro
 Val Cys Thr Ile Cys Val 215 Leu Tyr Thr Asp Leu Arg Arg Leu Arg
 225 Ala Val Arg Leu Arg Ser Gly Ala Lys Ala Leu Gly Lys Ala Arg Arg
 Lys Val Thr Val 245 Leu Val Leu Val Val Ala Val Cys Leu Leu Cys
 Trp Thr Pro Phe His Leu Ala Ser Val Val Ala Leu Thr Thr Asp Leu
 Pro Gln Thr Pro Leu Val Ile Ser Met Ser Tyr Val Ile Thr Ser Leu
 Ser Tyr Ala Asn Ser Cys 295 Leu Asn Pro Phe Leu Tyr Ala Phe Leu Asp
 305 Asp Asn Phe Arg Lys Asn Phe Arg Ser Ile Leu Arg Cys 320
 325 330

<210> 5
 <211> 687
 <212> RNA
 <213> Artificial Sequence

<220>
 <223> Riboprobe

<400> 5
 caaaagcugg agcuccaccg cgguggcggc cgcucuaagg cacuagugcc cuucagcacc 60
 gcaauaugcu gcggaaguuc uuccggaagu ugucuaucua aaagcgguag aggaaggggg 120
 ucaggcacga guuggcguag cugagggcug ugaugacgua ggacauacug augaccagug 180
 gggucugggg cagguccgug gucagggcca cgacagaggc cagguggaag ggcguccagc 240
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 cuagagccuu ggcuccagag cggagccgca cggcccgcag ccugcgccag aggucugugu 360
 agagcacaca gaugugcac acgggcagca cgaagcccag gaccaacgug uagacacggc 420
 uggccuugaa ccagaccugc ucgggccacg ggaagcucag cccacagcuu gggaccugca 480
 gcucguugcu guagacgcca gcgaaagaga agaagggcag aaccaggacc gugacgccc 540
 gccagacaca caggcuggcg accuucgccc cccgguaagg gcgccaggcg auguggcggg 600
 accucacggg ggccagcacc accagguauc gguccacgcu caucacggcu aggaaguaga 660
 ugcuggagaa gauguuguag uggucga 687

<210> 6
 <211> 17
 <212> PRT
 <213> Porcine

<400> 6
 Trp Tyr Lys His Thr Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala

<210> 7
 <211> 438
 <212> DNA
 <213> Human

<220>
 <221>
 <222> 408

<223>

<400> 7

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gccccatgag caggccagcg gcgcggccca ccgtgtgta gcggggactc gccacgtgct 60
tgtaccacgc gccggagggc agcggcagca ggagcagaag cagcagcagt gccagccgcg 120
ggcgactcgc ggagagcccc cgctcccctg ggccccacgc cagggcgctc gcgtcgacgg 180
ccgccccgcg ggccgggcca cgaaccggct cggctggggt tggcgcgca gtggagtgg 240
gacggccagg taccggagcg caggaggctg gagcgagacc gtgggtcccc tgcaggccca 300
gctataaccg ctcggtggcc ccgcctcggt ccgccccctc agtaccgctg ggctcccag 360
atggggggag ggacggaggg aggagaggga accctggcag ctggcgnggg acgtgggtac 420
ttgagcacct cactgagt 438
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<210> 8

<211> 264

<212> DNA

<213> Human

<400> 8

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ggggactcgc cactgtcttg taccacgcgc cggaggcgag cggcagcagg agcagaagca 120
gcagcagtcg cagccgcggc cggctcgcgg gagccccccg ctcccctggg cgccacgcca 180
ggcgctcgc gtcgacggcc gcccggcggg gcggggccac aaccggctcg gctgggtttg 240
ggcgcgagtc ggagttggga cggcaggtta ccggagcgca ggaggctgga ggcgagccgt 264
ggcgcgagtc ggagttggga cggc
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<210> 9

<211> 424

<212> DNA

<213> Human

<400> 9

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ggggactcgc cactgtcttg taccacgcgc cggaggcgag cggcagcagg agcagaagca 120
gcagcagtcg cagccgcggc cggctcgcgg gagccccccg ctcccctggg cgccacgcca 180
ggcgctcgc gtcgacggcc gcccggcggg gcggggccac aaccggctcg gctgggtttg 240
ggcgcgagtc ggagttggga cggcaggtta ccggagcgca ggaggctgga ggcgagccgt 300
gggtcccttg caggcccagc tataaccgct cggtgggccc gcctcgttcc gcccctcag 360
taccgctggg ctcccagat ggggggaggg acggaggag gagagggaac cctggcagct 420
ggcg 424
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<210> 10

<211> 375

<212> DNA

<213> Human

<400> 10

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tcccctgggc gccacgcagg gctacagcgt cgacggccgc ccgccccggc atcgcaaccg 180
gctcggtcgg gtttggcgcc gcagtggagt tgggacgccc aggtaccgga gcgcaggagg 240
ctggaggcga gccgtgggtc ccttcgaggc ccagctataa ccgctcggtg gccccgcctc 300
gttccgcccc ctacgtaccg ctgggctccc cagaatgggg gagggacgga gggaggagag 360
ggaaccttgg cagct 375
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<210> 11

<211> 260

<212> DNA

<213> Human

<220>

<221>

<222> 2, 61, 147, 189, 213, 237, 249

<223>

<400> 11

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cnacgttctc ggggacataa accctgttct tgtcctaacc cgccaagggg ccatggactt 60
nagcgcgctg gcgtcgagca gagaagtacg gggccctggg ccggggctcc ggtgaaccgg 120
cccctgctac cgctactgct gcttctnctc ttgctacctc tggccgccag cgcttggtag 180
aagcacgtng cgagccctcg ctatcacaca gtnggtcggt cctccgggct gctcatnggg 240
ctggccgcnt cgtcctacct 260
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<210> 12

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 12
aactccactg cgcgccccaa ccca 24

<210> 13
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 13
tctccacag ctctgaacc cag 24

<210> 14
<211> 375
<212> DNA
<213> Human

<400> 14
aactccactg cgcgccccaa cccagccgag ccggttcgtg gcccgcgccg ccgggcggcc 60
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cggctggcac tgcgtgct tctgtcctg ctgccgtgc cctccggcg gtgtacaag 180
cacgtggcga gtccccgcta ccacacggg ggcgcgcgc ctggcctect catggggctg 240
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caggagctgt gggag 375

<210> 15
<211> 125
<212> PRT
<213> Human

<400> 15
Asn Ser Thr Ala Arg Pro Asn Pro Ala Glu Pro Val Arg Gly Pro Pro
1 5 10 15
Arg Arg Ala Ala Val Asp Ala Ser Ala Leu Ala Trp Arg Pro Gly Glu
20 25 30
Arg Gly Ala Pro Ala Ser Arg Pro Arg Leu Ala Leu Leu Leu Leu
35 40 45
Leu Leu Leu Pro Leu Pro Ser Gly Ala Trp Tyr Lys His Val Ala Ser
50 55 60
Pro Arg Tyr His Thr Val Gly Arg Ala Ala Gly Leu Leu Met Gly Leu
65 70 75 80
Arg Arg Ser Pro Tyr Leu Trp Arg Arg Ala Leu Arg Ala Ala Ala Gly
85 90 95
Pro Leu Ala Arg Asp Thr Leu Ser Pro Glu Pro Ala Ala Arg Glu Ala
100 105 110
Pro Leu Leu Leu Pro Ser Trp Val Gln Glu Leu Trp Glu
115 120 125

<210> 16
<211> 23
<212> PRT
<213> Human

<400> 16
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu
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<210> 17
<211> 30
<212> PRT
<213> Human

<400> 17
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr Leu Trp
20 25 30

<210> 18

<211> 69
<212> DNA
<213> Human

<400> 18
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atggggctg 69

<210> 19
<211> 90
<212> DNA
<213> Human

<400> 19
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atggggctgc gtcgctcacc ctatctgtgg 90

<210> 20
<211> 29
<212> PRT
<213> Human

<400> 20
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr Leu
20 25

<210> 21
<211> 28
<212> PRT
<213> Human

<400> 21
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr
20 25

<210> 22
<211> 27
<212> PRT
<213> Human

<400> 22
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu Arg Arg Ser Pro
20 25

<210> 23
<211> 26
<212> PRT
<213> Human

<400> 23
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu Arg Arg Ser
20 25

<210> 24
<211> 25
<212> PRT
<213> Human

<400> 24
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu Arg Arg
20 25

<210> 25
<211> 24
<212> PRT
<213> Human

<400> 25
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met Gly Leu Arg
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<210> 26
 <211> 87
 <212> DNA
 <213> Human

<400> 26
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 atggggctgc gtcgtcacc ctatctg 87

<210> 27
 <211> 84
 <212> DNA
 <213> Human

<400> 27
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 atggggctgc gtcgtcacc ctat 84

<210> 28
 <211> 81
 <212> DNA
 <213> Human

<400> 28
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 atggggctgc gtcgtcacc c 81

<210> 29
 <211> 78
 <212> DNA
 <213> Human

<400> 29
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 atggggctgc gtcgtca 78

<210> 30
 <211> 75
 <212> DNA
 <213> Human

<400> 30
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 atggggctgc gtcgc 75

<210> 31
 <211> 72
 <212> DNA
 <213> Human

<400> 31
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 atggggctgc gt 72

<210> 32
 <211> 999
 <212> DNA
 <213> Human

<400> 32
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 ctgccgttcc tctatgtgct cctgcccgcc gtgtactccg ggaatctgtc tgtggggctg 180
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 gaccgatacc tgggtggtgt ggccaccgtg aggtcccccc acaigcccig gcgcacctac 480
 cggggggcga aggtcgccag cctgtgtgtc tggctgggca tcacggctct ggttctgccc 540

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ttcttctctt tcgctggcgt ctacagcaac gagctgcagg tcccaagctg tggcctgagc 600
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ttcgtgctgc ccgtgtgcac catctgtgtg ctctacacag acctcctgcg caggctgcgg 720
gccgtgcggc tccgtcttgg agccaaggct ctaggcaagg ccaggcggaa ggtgaccgtc 780
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atcaccagcc tcacgtacgc caactcgtgc ctgaaccctt tctctacgc ctttctagat 960
gacaacttcc ggaagaactt ccgcagcata ttgcggtgc 999

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<210> 33
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 33
 tctccacag ctctgaacc cagc 24

<210> 34
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 34
 acagataggg tgagcgacgc agcc 24

<210> 35
 <211> 1102
 <212> DNA
 <213> Human

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<400> 35
gccatttaag tggagtcttg aaggatgagt aggtgttagg cacagacgca cagaggcagg 60
caaagccaca gectgttggg ttaggcaaaa attgagactg gctggataaa gtggtcttgg 120
gggaccatca ccagagagga ggccgtggag gtcigcaagg ccttgtcctg cccctccagg 180
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<210> 36
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 36
 aactccactg cgcgccccaa ccca 24

<210> 37
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 37
ctggcactgc tgctgcttct gctc 24

<210> 38
<211> 609
<212> DNA
<213> Human

<400> 38
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gaattctag 609

<210> 39
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 39
agcggctactg agggggcggg acga 24

<210> 40
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 40
gggtctatga gcggtcctg gaag 24

<210> 41
<211> 719
<212> DNA
<213> Human

<400> 41
ggcggggcca ccgagcgggt atagctgggc ctgcagggga cccacggctc gcctccagcc 60
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gttcgtggcc cggccggcgg ggccggccgtc gacgcgagcg cctggcgtg gcgcccaggg 180
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gcgttgacc ccgcagcaaa ccgccttggc ctgccctgcc tggccccgg accgttctga 660
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<210> 42
<211> 165
<212> PRT
<213> Human

<400> 42
Leu Ala Trp Arg Pro Gly Glu Arg Gly Ala Pro Ala Ser Arg Pro Arg
1 5 10 15
Leu Ala Leu Leu Leu Leu Leu Leu Leu Pro Leu Pro Ser Gly Ala
20 25 30
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
35 40 45
Ala Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr Leu Trp Arg Arg
50 55 60

Ala Leu Arg Ala Ala Ala Gly Pro Leu Ala Arg Asp Thr Leu Ser Pro
65 70 75 80
Glu Pro Ala Ala Arg Glu Ala Pro Leu Leu Leu Pro Ser Trp Val Gln
85 90 95
Glu Leu Trp Glu Thr Arg Arg Arg Ser Ser Gln Ala Gly Ile Pro Val
100 105 110
Arg Ala Pro Arg Ser Pro Arg Ala Pro Glu Pro Ala Leu Glu Pro Glu
115 120 125
Ser Leu Asp Phe Ser Gly Ala Gly Gln Arg Leu Arg Arg Asp Val Ser
130 135 140
Arg Pro Ala Val Asp Pro Ala Ala Asn Arg Leu Gly Leu Pro Cys Leu
145 150 155 160
Ala Pro Gly Pro Phe
165

<210> 43
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 43
acagataggg tgagcgacgc agcc 24

<210> 44
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 44
tgagcgacgc agcccatga gcag 24

<210> 45
<211> 235
<212> DNA
<213> Porcine

<400> 45
cgacaccct gcgcccagac cctccggagc cagttcctgg tccgccccgc cgggagccgt 60
cagcatgaac ccccgggcac gcggcatggg agcgcggggc cgggaccgg gggccactgc 120
gaggcgccgg ctgctggcat tgctgttact gctgctgctg ctgccgctgc ccgccgtgc 180
ctggtacaag cacacggcga gtccccgcta ccacacggtg gggcgccgc cgggc 235

<210> 46
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 46
cagcggcagc agcagcagca gtaa 24

<210> 47
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 47
cagcagtaac agcaatgcca gcag 24

<210> 48
<211> 156
<212> DNA
<213> Porcine

<400> 48

ctgtagcctc ccgcgctgcg gcttcccgac acccctgcgc ccagaccctc cggagccagt 60
 tcctgggtccg ccccgccggg agccgtcagc atgaaccccc gggcacgcgg catgggagcg 120
 cggggcccg gaccgggggc cactgcgagg cgcggg 156

<210> 49
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 49
 cggctgctgg cattgctgtt actg 24

<210> 50
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 50
 cgcccgtgcc tggtaacaagc aca 23

<210> 51
 <211> 588
 <212> DNA
 <213> Porcine

<400> 51
 cggcgaagtc ccgctaccac acggtggggc gcggcgcggg cctgctcatg gggctgcgcc 60
 gctcgcccta catgtggcgc cgcgcgctgc gcccggcggc cggggcccctg gcctgggaca 120
 ctitcggcca ggacgtgccc cctcggggac cctccgccag gaacgccctc tctcggggc 180
 ccgcccctcg cgacgctccg ctgcttcccc ccgggggtca gacactgtgg cagggtcgac 240
 gcggaagctt ccgctcggg atcccgtca gtgcgcccgc cagcccgccg ccccggggt 300
 ccgagccgca accggaattg ggcgcctctt cctggacctc ggcggagtag accagagcct 360
 tcggagagtc ttcagctcag cgggtggtctg cgcagggaaac cgcccttcgcc agcccccgcc 420
 tcgccccagc gtcagagccg accgatgcg gggcccggcg gcgcggcccc gcgcctggcc 480
 cccgcggagt ctcttcgcgc ccccaggccg gccgtctggt caataaaacc cgcctagttc 540
 ctgcgaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 588

<210> 52
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 52
 ttcccagacac ccctgcgccc agac 24

<210> 53
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 53
 gggctggcga aggcggttcc ctgc 24

<210> 54
 <211> 565
 <212> DNA
 <213> Porcine

<400> 54
 cctccggagc cagttcctgg tccgccccgc cgggagccgt cagcatgaac ccccgggcac 60
 gcggcatggg agcgccgggc ccgggaccgg gggccactgc gaggcgcggc ctgctggcat 120
 tgctgttact gctgctgctg ctgccgctgc ccgcccgtgc ctggtacaag cacacggcga 180
 gtccccgcta ccacacggtg ggcgcgcccg cgggcccgtc catggggctg gcgccctcgc 240
 cctacatgtg gcgcgcgcgc ctgcgcccgg cggccggggc cctggcctgg gacactttcg 300

gcccaggacgt gcccctcgg ggaccctccg ccaggaacgc cctctctccg ggcccgcgc 360
 ctccgacgc tccgtgctt ccccccggg ttcagacact gtggcagggt cgacgcggaa 420
 gcttccgctc cgggatcccg gtcagtgcgc cccgcagccc gcgcgcccg gggtccgagc 480
 cgcaaccgga attggcgccc tcttcttga cctcggcggg gtagaccaga gccttcggag 540
 agtcttcagc tcagcgggtg tctgc 565

<210> 55
 <211> 159
 <212> PRT
 <213> Porcine

<400> 55
 Met Asn Pro Arg Ala Arg Gly Met Gly Ala Arg Gly Pro Gly Pro Gly
 1 5 10 15
 Ala Thr Ala Arg Arg Leu Leu Ala Leu Leu Leu Leu Leu Leu
 20 25 30
 Leu Pro Leu Pro Ala Arg Ala Trp Tyr Lys His Thr Ala Ser Pro Arg
 35 40 45
 Tyr His Thr Val Gly Arg Ala Ala Gly Leu Leu Met Gly Leu Arg Arg
 50 55 60
 Ser Pro Tyr Met Trp Arg Arg Ala Leu Arg Pro Ala Ala Gly Pro Leu
 65 70 75 80
 Ala Trp Asp Thr Phe Gly Gln Asp Val Pro Pro Arg Gly Pro Ser Ala
 85 90 95
 Arg Asn Ala Leu Ser Pro Gly Pro Ala Pro Arg Asp Ala Pro Leu Leu
 100 105 110
 Pro Pro Gly Val Gln Thr Leu Trp Gln Val Arg Arg Gly Ser Phe Arg
 115 120 125
 Ser Gly Ile Pro Val Ser Ala Pro Arg Ser Pro Arg Ala Arg Gly Ser
 130 135 140
 Glu Pro Gln Pro Glu Leu Gly Ala Ser Ser Trp Thr Ser Ala Glu
 145 150 155

<210> 56
 <211> 23
 <212> PRT
 <213> Porcine

<400> 56
 Trp Tyr Lys His Thr Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met Gly Leu
 20

<210> 57
 <211> 30
 <212> PRT
 <213> Porcine

<400> 57
 Trp Tyr Lys His Thr Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr Met Trp
 20 25 30

<210> 58
 <211> 69
 <212> DNA
 <213> Porcine

<400> 58
 tggatcaagc acacggcgag tccccgtac cacacgggtg gccgcgccgc gggcctgctc 60
 atggggctg 69

<210> 59
 <211> 90
 <212> DNA
 <213> Porcine

<400> 59
 tggatcaagc acacggcgag tccccgtac cacacgggtg gccgcgccgc gggcctgctc 60
 atggggctg gccgtcgcc ctacatgtg 90

<210> 60
 <211> 23
 <212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 60

cgttctcggg gacataaacc ctg 23

<210> 61

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 61

atgagcagcc cggaggcacg acc 23

<210> 62

<211> 188

<212> DNA

<213> Rat

<400> 62

ttcttgtcct	aaccgcgcaa	ggggccatgg	acttgagcgc	gctggcgctg	agcagagaag	60
tacggggccc	tgggcccggg	gctccggtga	accggcccct	gctaccgcta	ctgctgcctc	120
tgctcttgct	acctctgccc	gccagcgcc	ggtacaagca	cgtggcgagc	ccctgcctatc	180
acacagtg						188

<210> 63

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 63

atgagcagcc cggaggcacg acc 23

<210> 64

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 64

actgtgtgat agcgagggtc cgc 23

<210> 65

<211> 615

<212> DNA

<213> Rat

<400> 65

ctcagagctg	tactaggcag	gaagaggagc	ggccctcagg	gaagggtggc	cctatgctta	60
aaactttcct	gtctcctctc	cataagtgt	ccactttag	caactcctac	caagggggca	120
tccttttgcc	cctggcagcc	catccttga	ttctgagacc	atgcatggta	ccagaactcc	180
ctcccagaca	gttcccttcc	tggggcgag	gaaagggtaa	gcaaggagat	ccccactaa	240
agcttcaagc	gcagtcagc	tggcgacta	ctcatggga	ggcttctagc	taccggggt	300
ccctcttctc	cctccctctc	catcctcctc	tcccttgggc	atgtgccgcg	ggggcgagcc	360
ggggcggggc	cattgagaag	ctgtagtgc	accaactgac	tagtctcttc	catcctccgg	420
agctccgacg	ttctcgggga	cataaacct	gttcttgctc	taaccggcca	aggggcatg	480
gacttgagcg	cgctggcgtc	gagcagagaa	gtacggggcc	ctggggcccg	ggctccggtg	540
aaccggcccc	tgctaccgct	actgtgtctt	cgtctcttgc	tacctctgcc	cgccagcgcc	600
tgtacaagc	acgtg					615

<210> 66

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Primer

<400> 66
cgttctcggg gacataaacc ctg 23

<210> 67
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 67
cgagccctcg ctatcacaca gtgg 24

<210> 68
<211> 497
<212> DNA
<213> Rat

<400> 68
gtcgtgcctc cgggctgctc atggggctgc gccgctcgcc ctacctgtgg cgccgtgcct 60
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tgcttccttc cccggggcag gagctgggg aggtacgaag caggagtica ccggcaggac 180
ttcccgtaga tgcaaccgg agtctgcggg acctggagg agccggccaa cctgagcagt 240
cgctaagctt tcagtctgg acttcagcag agcccgctgc tagagccttc ggtgagacgc 300
ttcgtgcccc gccatgggtc ctgcagcaaa tcatctttgc cgatcctgtc aggcctgcgc 360
accgtctcaa gaaccgatgg cggcccggtg cttgacctaa gcaggagcac agcttgtagc 420
tccagtcagg tctcgittgc tggtaataa aatcactctg aticccaaaa aaaaaaaaaa 480
aaaaaaaaa aaaaaaa 497

<210> 69
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 69
ggggcggggc cattgagaag c 21

<210> 70
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 70
tgaccagaca acgagacctg a 21

<210> 71
<211> 684
<212> DNA
<213> Rat

<400> 71
tgtagtcgca ccaactgact agtctcttcc atcctccgga gctccgacgt tctcggggac 60
ataaaccctg ticttgtcct aaccggccaa gggccatgg acttgagcgc gctggcgtcg 120
agcagagaag tacggggccc tggggccggg gctccggtag accggccctt gctaccgcta 180
ctgctgtctc tgctcttgct acctctgccc gccagcgctt ggtacaagca cgtggcgagc 240
cctcgctatc acacagtggg tctgtcctcc gggctgctca tggggctgctg ccgctcgccc 300
tacctgtggc gccgtgcctt gggtagggcc gctggaccgc tctgtgggct cccgggacag 360
atggcccgcga gcgctctcct gcttccttcc cccgggcagg agctgtggga ggtacgaagc 420
aggagttcac cggcaggact tccgtgcat gcaaccggga gcttcgggga cctggaggga 480
gccggccaac ctgagcagtc gctaagcttt cagtccctga cttcagcaga gcccgctgct 540
agagccttcg gtgagacgct tctgcccag ccatggcttc tgcagcaaat catctttgcc 600
gatcctgtca ggctcgacga ccgtctcaag aaccgatggc gcccccgctc ttgacctaa 660
caggagcaca gctttagct ccag 684

<210> 72
<211> 185
<212> PRT

<213> Rat

<400> 72

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Met Asp Leu Ser Ala Leu Ala Ser Ser Arg Glu Val Arg Gly Pro Gly
1      5      10      15
Pro Gly Ala Pro Val Asn Arg Pro Leu Leu Pro Leu Leu Leu Leu
20      25      30
Leu Leu Leu Pro Leu Pro Ala Ser Ala Trp Tyr Lys His Val Ala Ser
35      40      45
Pro Arg Tyr His Thr Val Gly Arg Ala Ser Gly Leu Leu Met Gly Leu
50      55      60
Arg Arg Ser Pro Tyr Leu Trp Arg Arg Ala Leu Gly Gly Ala Ala Gly
65      70      75      80
Pro Leu Val Gly Leu Pro Gly Gln Met Ala Arg Ser Ala Leu Leu Leu
85      90      95
Pro Ser Pro Gly Gln Glu Leu Trp Glu Val Arg Ser Arg Ser Ser Pro
100     105     110
Ala Gly Leu Pro Val His Ala Thr Arg Ser Leu Arg Asp Leu Glu Gly
115     120     125
Ala Gly Gln Pro Glu Gln Ser Leu Ser Phe Gln Ser Trp Thr Ser Ala
130     135     140
Glu Pro Ala Ala Arg Ala Phe Gly Glu Thr Leu Arg Ala Gln Pro Trp
145     150     155     160
Phe Leu Gln Gln Ile Ile Phe Ala Asp Pro Val Arg Leu Asp Asp Arg
165     170     175
Leu Lys Asn Arg Trp Arg Pro Arg Ala
180     185
```

<210> 73

<211> 23

<212> PRT

<213> Rat

<400> 73

```
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1      5      10      15
Ser Gly Leu Leu Met Gly Leu
20
```

<210> 74

<211> 30

<212> PRT

<213> Rat

<400> 74

```
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1      5      10      15
Ser Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr Leu Trp
20      25      30
```

<210> 75

<211> 69

<212> DNA

<213> Rat

<400> 75

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tggatacaagc acgtggcgag ccctcgctat cacacagtgg gtcgtgcctc cgggctgctc 60
atggggctgc
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<210> 76

<211> 90

<212> DNA

<213> Rat

<400> 76

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tggatacaagc acgtggcgag ccctcgctat cacacagtgg gtcgtgcctc cgggctgctc 60
atggggctgc gccgtcggc ctacctgtgg 90
```

<210> 77

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Probe

<400> 77

ttcattcctca acctggccat cgc 23

<210> 78
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 78
acctgattct tgcctaacc ctcc 24

<210> 79
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 79
cctgcttcgt acctcccaca gctc 24

<210> 80
<211> 311
<212> DNA
<213> Mouse

<400> 80
aaggggcaat tgacgtgagc gcgctggcgt ctaacagaga agtacggggc cctggggccc 60
ggactccag gaaccggccc ctgctgcccc tgctgctgct tctgctcttg ctaccgctgc 120
ccgccagcgc ctggtataag cacgtggcga gtccccgcta tcacacagtg ggtcgtgcct 180
ccgggctgct catggggctg cggcgctcgc cctaccagtg gcgccgtgcc ctgggcgggg 240
ctgctggacc cctctcccgg ctcccaggac cggtcgcccg cggcgctctc ctgcttcctt 300
cctcagggca g 311

<210> 81
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 81
catgagcagc ccggaggcac gacc 24

<210> 82
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 82
gtgatagcgg ggactcgcca cgtg 24

<210> 83
<211> 237
<212> DNA
<213> Mouse

<400> 83
aaaggctgta gtcgcaccaa ctgactggtc tccattcctt ggagctccga cgtgctcgtt 60
ctcggagaca taaacccagt tctgtccta accctccaag gggcaattga cgtgagcgcg 120
ctggcgctca acagagaagt acggggccct gggcccggga ctcccaggaa ccggcccttg 180
ctgccccctg tgctgcttct gctcttgcta ccgctgcccg ccagcgccctg gtataag 237

<210> 84
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Primer

<400> 84
accagttct tgcctaacc ctcc 24

<210> 85
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 85
gggcaattga cgtgagcgg ctgg 24

<210> 86
<211> 598
<212> DNA
<213> Mouse

<400> 86
cgtctaacag agaagtacgg ggccttgggc ccgggactcc caggaaccgg cccctgctgc 60
ccctgctgct gcttctgctc ttgctaccgc tgcctgccag cgcctggtat aagcacgtgg 120
cgagtccccg ctatcacaca gtgggtcgtg cctccgggct gctcatgggg ctgcgccgct 180
cgccctacca gtggcgccgt gccctgggcg gggctgctgg acccctctcc cggctcccag 240
gaccggtcgc ccgcggcgct ctctctgttc ctctctcagg gcaggagctg tgggaggtac 300
gaagcaggag ctacacctga gggcttcccc tccatgcacc ctggagtccg cgggacctgg 360
agggagtcgg ccaaccggag cagtcgctaa gccttcactc ctggaatctca gaggagcccc 420
ctgctagagc cttcggagag acgcttcgtg ccagccatg gticctgcag caagtcattt 480
ttgccgatcc tgtcaggccc aagaaccgat ggcgccccca tgcctgacct aggcaggagc 540
acagctigaa gctccagta ggcctcgtgt ttctggctaa taaaaccaac ctgattcc 598

<210> 87
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 87
aaaggctgta gtcgaccaa c 21

<210> 88
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 88
accagaaaca cgaggcctga c 21

<210> 89
<211> 659
<212> DNA
<213> Mouse

<400> 89
tgactggctt ccattctctg gagctccgac gtgctcgttc tcggagacat aaaccagtt 60
cttgtcctaa ccctccaagg ggcaattgac gtgagcgcgc tggcctctaa cagagaagta 120
cggggccctg ggcgggggac tcccaggaac cggccctgct tgcctctgct gctgcttctg 180
ctcttgctac cgctgccgcg cagcgccctg tataagcacg tggcgagtcc ccgctatcac 240
acagtgggtc gtgcctccgg cctgctcatg gggctgcgcc gctcgcccta ccagtggcgc 300
cgtgcccttg gcggggctgc tggacccctc tcccggctcc caggaccggt cggccgcggc 360
gctctcctgc ttctttcttc agggcaggag ctgtgggagg tacgaagcag gagctcacct 420
gcagggcctc ccgtccatgc accctggagt ccgcgggacc tggagggagt ccgccaaccg 480
gagcagtcgc taagccttca ctctggatc tcagaggagc ccgctgctag agccttcgga 540
gagacgcttc gtgccagcc atggttctg cagcaagta tctttgccga tccgtcagg 600
cccaagaacc gatggcgccc ccatgcttga cctaggcagg agcacagctt gaagctcca 659

<210> 90
<211> 176
<212> PRT

<213> Mouse

<400> 90

```
Leu Ala Ser Asn Arg Glu Val Arg Gly Pro Gly Pro Gly Thr Pro Arg
1      5      10      15
Asn Arg Pro Leu Leu Pro Leu Leu Leu Leu Leu Leu Pro Leu
20      25      30
Pro Ala Ser Ala Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr
35      40      45
Val Gly Arg Ala Ser Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr
50      55      60
Gln Trp Arg Arg Ala Leu Gly Gly Ala Ala Gly Pro Leu Ser Arg Leu
65      70      75      80
Pro Gly Pro Val Ala Arg Gly Ala Leu Leu Leu Pro Ser Ser Gly Gln
85      90      95
Glu Leu Trp Glu Val Arg Ser Arg Ser Ser Pro Ala Gly Leu Pro Val
100     105     110
His Ala Pro Trp Ser Pro Arg Asp Leu Glu Gly Val Arg Gln Pro Glu
115     120     125
Gln Ser Leu Ser Leu His Ser Trp Ile Ser Glu Glu Pro Ala Ala Arg
130     135     140
Ala Phe Gly Glu Thr Leu Arg Ala Gln Pro Trp Phe Leu Gln Gln Val
145     150     155     160
Ile Phe Ala Asp Pro Val Arg Pro Lys Asn Arg Trp Arg Pro His Ala
165     170     175
```

<210> 91

<211> 23

<212> PRT

<213> Mouse

<400> 91

```
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1      5      10      15
Ser Gly Leu Leu Met Gly Leu
20
```

<210> 92

<211> 30

<212> PRT

<213> Mouse

<400> 92

```
Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1      5      10      15
Ser Gly Leu Leu Met Gly Leu Arg Arg Ser Pro Tyr Gln Trp
20      25      30
```

<210> 93

<211> 69

<212> DNA

<213> Mouse

<400> 93

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tggtataagc acgtggcgag tccccgctat cacacagtgg gtcgtgcctc cgggctgctc 60
atggggctg 69
```

<210> 94

<211> 90

<212> DNA

<213> Mouse

<400> 94

```
tggtataagc acgtggcgag tccccgctat cacacagtgg gtcgtgcctc cgggctgctc 60
atggggctg gccgctcgcc ctaccagtgg 90
```

<210> 95

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<221>

<222> 21

<223> Xaa on the 21st position means Met (0)

<400> 95
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Xaa Gly Leu
 20

<210> 96
 <211> 22
 <212> PRT
 <213> Human

<400> 96
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met Gly
 20

<210> 97
 <211> 21
 <212> PRT
 <213> Human

<400> 97
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met
 20

<210> 98
 <211> 20
 <212> PRT
 <213> Human

<400> 98
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu
 20

<210> 99
 <211> 19
 <212> PRT
 <213> Human

<400> 99
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu
 20

<210> 100
 <211> 18
 <212> PRT
 <213> Human

<400> 100
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly
 20

<210> 101
 <211> 17
 <212> PRT
 <213> Human

<400> 101
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala
 20

<210> 102
 <211> 16
 <212> PRT
 <213> Human

<400> 102
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15

1 5 10 15

<210> 103
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <221>
 <222> 21
 <223> Xaa on the 21st position means Met (0)

<400> 103
 Trp Tyr Lys His Thr Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Xaa Gly Leu
 20

<210> 104
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <221>
 <222> 21
 <223> Xaa on the 21st position means Met (0)

<400> 104
 Trp Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ser Gly Leu Leu Xaa Gly Leu
 20

<210> 105
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <221>
 <222> 1
 <223> Xaa on the 1st position means Fmoc Trp

<400> 105
 Xaa Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met Gly Leu
 20

<210> 106
 <211> 23
 <212> PRT
 <213> Artificial Sequence

<220>
 <221>
 <222> 1
 <223> Xaa on the 1st position means Ac Trp

<400> 106
 Xaa Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
 1 5 10 15
 Ala Gly Leu Leu Met Gly Leu
 20

<210> 107
 <211> 22
 <212> PRT
 <213> Human

<400> 107
 Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala Ala
 1 5 10 15
 Gly Leu Leu Met Gly Leu
 20

<210> 108
<211> 20
<212> PRT
<213> Human

<400> 108
His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala Ala Gly Leu
1 5 10 15
Leu Met Gly Leu
20

<210> 109
<211> 15
<212> PRT
<213> Human

<400> 109
Arg Tyr His Thr Val Gly Arg Ala Ala Gly Leu Leu Met Gly Leu
1 5 10 15

<210> 110
<211> 9
<212> PRT
<213> Human

<400> 110
Arg Ala Ala Gly Leu Leu Met Gly Leu
1 5

<210> 111
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<221>
<222> 1
<223> Xaa on the 1st position means Ac Tyr

<400> 111
Xaa Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala Ala
1 5 10 15
Gly Leu Leu Met Gly Leu
20

<210> 112
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221>
<222> 1
<223> Xaa on the 1st position means DTrp

<400> 112
Xaa Tyr Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu Met Gly Leu
20

<210> 113
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<221>
<222> 1
<223> Xaa on the 1st position means 3-Indolepropanoyl Tyr

<400> 113
Xaa Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala Ala
1 5 10 15
Gly Leu Leu Met Gly Leu

<210> 114
 <211> 66
 <212> DNA
 <213> Human

<400> 114
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgccgc tggcctgctc 60
 atgggg 66

<210> 115
 <211> 63
 <212> DNA
 <213> Human

<400> 115
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgccgc tggcctgctc 60
 atg 63

<210> 116
 <211> 60
 <212> DNA
 <213> Human

<400> 116
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgccgc tggcctgctc 60

<210> 117
 <211> 57
 <212> DNA
 <213> Human

<400> 117
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgccgc tggcctg 57

<210> 118
 <211> 54
 <212> DNA
 <213> Human

<400> 118
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgccgc tggc 54

<210> 119
 <211> 51
 <212> DNA
 <213> Human

<400> 119
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgccgc t 51

<210> 120
 <211> 48
 <212> DNA
 <213> Human

<400> 120
 tggtagaagc acgtggcgag tccccgctac cacacggtag gccgcgcc 48

<210> 121
 <211> 66
 <212> DNA
 <213> Human

<400> 121
 tacaagcagc tggcgagtc ccgctaccac acggtgggcc gcgccgctgg cctgctcatg 60
 gggctg 66

<210> 122
 <211> 60
 <212> DNA
 <213> Human

<400> 122
 cacgtggcga gtccccgcta ccacacggtag ggccgcgccg ctggcctgct catggggctg 60

<210> 123
 <211> 45
 <212> DNA
 <213> Human

<400> 123
 cgctaccaca cggtagggccg cggcgtggc ctgctcatgg ggctg

45

<210> 124
 <211> 27
 <212> DNA
 <213> Human

<400> 124
 cgcgccgtg gcctgctcat ggggctg

27

<210> 125
 <211> 51
 <212> DNA
 <213> Porcine

<400> 125
 tggtaaacg acacggcgag tccccgtac cacacggtag gccgcgccgc g

51

<210> 126
 <211> 329
 <212> PRT
 <213> Rat

<400> 126
 Met His Asn Leu Ser Leu Phe Glu Pro Gly Arg Gly Asn Val Ser Cys
 5 10 15
 Gly Gly Pro Phe Leu Gly Cys Pro Asn Glu Ser Asn Pro Ala Pro Leu
 20 25 30
 Pro Leu Pro Gln Pro Leu Ala Val Ala Val Pro Val Val Tyr Gly Val
 35 40 45
 Ile Cys Ala Val Gly Leu Ala Gly Asn Ser Ala Val Leu Tyr Val Leu
 50 55 60
 Leu Arg Thr Pro Arg Met Lys Thr Val Thr Asn Val Phe Ile Leu Asn
 65 70 75 80
 Leu Ala Ile Ala Asp Glu Leu Phe Thr Leu Val Leu Pro Ile Asn Ile
 85 90 95
 Ala Asp Phe Leu Leu Arg Arg Trp Pro Phe Gly Glu Val Met Cys Lys
 100 105 110
 Leu Ile Val Ala Val Asp Gln Tyr Asn Thr Phe Ser Ser Leu Tyr Phe
 115 120 125
 Leu Ala Val Met Ser Ala Asp Arg Tyr Leu Val Val Leu Ala Thr Ala
 130 135 140
 Glu Ser Arg Arg Val Ser Gly Arg Thr Tyr Gly Ala Ala Arg Ala Val
 145 150 155 160
 Ser Leu Ala Val Trp Ala Leu Val Thr Leu Val Val Leu Pro Phe Ala
 165 170 175
 Val Phe Ala Arg Leu Asp Glu Glu Gln Gly Arg Arg Gln Cys Val Leu
 180 185 190
 Val Phe Pro Gln Pro Glu Ala Phe Trp Trp Arg Ala Ser Arg Leu Tyr
 195 200 205
 Thr Leu Val Leu Gly Phe Ala Ile Pro Val Ser Thr Ile Cys Ala Leu
 210 215 220
 Tyr Ile Thr Leu Leu Cys Arg Leu Arg Ala Ile Gln Leu Asp Ser His
 225 230 235 240
 Ala Lys Ala Leu Asp Arg Ala Lys Lys Arg Val Thr Leu Leu Val Val
 245 250 255
 Ala Ile Leu Ala Val Cys Leu Leu Cys Trp Thr Pro Tyr His Leu Ser
 260 265 270
 Thr Ile Val Ala Leu Thr Thr Asp Leu Pro Gln Thr Pro Leu Val Ile
 275 280 285
 Gly Ile Ser Tyr Phe Ile Thr Ser Leu Ser Tyr Ala Asn Ser Cys Leu
 290 295 300
 Asn Pro Phe Leu Tyr Ala Phe Leu Asp Asp Ser Phe Arg Arg Ser Leu
 305 310 315 320
 Arg Gln Leu Val Ser Cys Arg Thr Ala
 325

<210> 127
 <211> 987

<212> DNA
<213> Rat

<400> 127
atgcacaact tgtcgtcttt cgagcctggc aggggcaatg tgtcttgcgg cggcccatTT 60
ttgggctgtc ctaacgagtc gaacccagcg cctctgccac tggcgcagcc tctggcggta 120
gcagtgcctg ttgtctacgg ggtgatctgc gcggtgggac tggcgggcaa ctccgcggtg 180
ctgtacgtac tgcctgcgcac gccgcgcalg aagactgtta ccaacgtgtt cattctcaac 240
ctggctatcg cggacgagct cttcaccctc gtgctgcccc tcaacatcgc ggacttcctg 300
ctgaggcgct ggcccttcgg ggaagtcatg tgcaagctca tcgtggctgt cgaccagtac 360
aacacattct ctaggctcta cttcctcgcc gtcagtgcgc cagaccgcta cctggttgtc 420
ctggccacag ccgagtcgcg ccgggtgtcc gggcgcaatt atggtcagc gcgggctgtc 480
agtctggcgg ttggggcgct ggtgacatig gtcgtgctgc cttttgcggg attcgccggg 540
ctggacgaag agcagggtcg gcgtcagtcg gtgctggtct tcccgcagcc tgaggccttc 600
tgggtggcgg ccagccgtct gtacactcta gtgttgggct tcgccatccc ggtgtccacc 660
atctgcggcc tctatatcac cctgtttgic cgactgcgtg ctatccagct agacagccac 720
gccaaggccc tggaccgtgc caagaagcgc gtgacctgt tgggtggggc gattctggct 780
gtgtgcctcc tctgtgggac accgtaccac ctgagcacca tagtggcgct caccaccgac 840
ctcccgcaaa caccgttggg catcggcac tccttactca tcaccagtct gagctatgcc 900
aacagctgcc tcaacccttt cctciatgcc ttcctggagc acagcttccg caggagcctg 960
cggcagctgg tgcctgccc cacagcc 987

<210> 128
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 128
actgataTgc acaactTgtc gctcttgc 28

<210> 129
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 129
actagttcag gctgtgcggc atgacacc 28

<210> 130
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 130
gttgggtggg gcgattctg 19

<210> 131
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 131
tggtgagcgc cactatggt 19

<210> 132
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 132
gtcccgatg ttgatgggca gcac 24

<210> 133
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 133
gaagagctca tcggcgatag ccag 24

<210> 134
<211> 440
<212> DNA
<213> Mouse

<400> 134
taagcagtgg taacaacgca gactacgagg gggcgcataa gcagtggtaa caacgcagag 60
tcacgcgggg agtgccctggg tgcagatccc tgtaaacgtg ggcgcataaa cctcgagttt 120
cgcggggctg ctgagtgga tcttggtgtt cgcctgctct ccagccctct ccaagatgca 180
taacttaacg cttttcgagt ctggagggga caacgtgtct tgcggcggct catcttggg 240
ctgtcccaac gggctccagcc tggctcctct gccgctgccg cagccactgg cggtagcagt 300
gcctgtcgtc tacggggtaa ttgcccgtt gggactggct ggcaactctg cggctgtgta 360
cgtactcgtg cgcacggcgc gcatgaagac tgcaccaac gtgttcattc tcaacctggc 420
tatcgccgat gactcttca 440

<210> 135
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 135
tttcgcgggg ctgctgagt gaat 24

<210> 136
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 136
agtctgcct gcgggtgaaa gagg 24

<210> 137
<211> 1083
<212> DNA
<213> Mouse

<400> 137
tttcgcgggg ctgctgagt gaatcctggt ggtcgccctg tctccagccc tctccaagat 60
gcataactta acgcttttcg agtcaggagg ggacaacgtg tcttgcggcg gctcatcttt 120
gggctgtccc aacgggtcca gcctggctcc tctgccgctg ccgcagccac tggcggtagc 180
agtgcctgtc gctacgggg taatttgcgc cgtgggactg gctggcaact ctgcggtgct 240
gtacgtactg ctgcgcacgc cgcgcataaa gactgtcacc aacgtgttca tcttcaacct 300
ggctatcggc gatgagctct tcaccctcgt gctgcccatc aacatcgccg acttccctgt 360
gaggcgctgg cccctcgggg aggtcatgtg caagctcatt gtagccgtcg accagtacaa 420
cactttctct agcctctact tctcggcctt catgagcgcc gaccgatacc tgggtgttct 480
ggccacagca gactcgcgcc ggggtgtccg gcgcacttac ggtgcagcgc gtgctgtcag 540
tctggcgggt tgggcgctgg tgacgctggt cgtgctgccc ttgcccgtat tgcctcggct 600
ggacgaggag cagggtcggc gccagtgctt gctggtcttc ccgcagcccg aggccttctg 660
gtggcggtgc agccgtctct acacactagt attgggcttt gccatcccgg tgaccaccat 720
ctgtgctctc tataccactc tgcctcggcg actgctgctt atccagctag atagccacgc 780
caaggccctg gatcgtgcca agaagcgcgt gacctgttgg gtggcggcga ttctggctgt 840
gtgcctcctc tgcctggacgc ctatcacct gactaccata gtggccctca ccaccgacct 900
cccgcaaac cgcctggtca tggcatctc ttacttcatc accagcctga gctatgctaa 960
cagctgcttc aaccctttcc tctatgcctt cctggacgac agcttccgca gaagcctccg 1020
gcaattgggt tcatgccgtt cagcctgatg ccttttccac ctctttccac cgcaggcagc 1080
act 1083

<210> 138

<211> 329
 <212> PRT
 <213> Mouse

<400> 138
 Met His Asn Leu Thr Leu Phe Glu Ser Gly Gly Asp Asn Val Ser Cys
 5 10 15
 Gly Gly Ser Ser Leu Gly Cys Pro Asn Gly Ser Ser Leu Ala Pro Leu
 20 25 30
 Pro Leu Pro Gln Pro Leu Ala Val Ala Val Pro Val Val Tyr Gly Val
 35 40 45
 Ile Cys Ala Val Gly Leu Ala Gly Asn Ser Ala Val Leu Tyr Val Leu
 50 55 60
 Leu Arg Thr Pro Arg Met Lys Thr Val Thr Asn Val Phe Ile Leu Asn
 65 70 75 80
 Leu Ala Ile Ala Asp Glu Leu Phe Thr Leu Val Leu Pro Ile Asn Ile
 85 90 95
 Ala Asp Phe Leu Leu Arg Arg Trp Pro Phe Gly Glu Val Met Cys Lys
 100 105 110
 Leu Ile Val Ala Val Asp Gln Tyr Asn Thr Phe Ser Ser Leu Tyr Phe
 115 120 125
 Leu Ala Val Met Ser Ala Asp Arg Tyr Leu Val Val Leu Ala Thr Ala
 130 135 140
 Glu Ser Arg Arg Val Ser Gly Arg Thr Tyr Gly Ala Ala Arg Ala Val
 145 150 155 160
 Ser Leu Ala Val Trp Ala Leu Val Thr Leu Val Val Leu Pro Phe Ala
 165 170 175
 Val Phe Ala Arg Leu Asp Glu Glu Gln Gly Arg Arg Gln Cys Val Leu
 180 185 190
 Val Phe Pro Gln Pro Glu Ala Phe Trp Trp Arg Ala Ser Arg Leu Tyr
 195 200 205
 Thr Leu Val Leu Gly Phe Ala Ile Pro Val Thr Thr Ile Cys Ala Leu
 210 215 220
 Tyr Thr Thr Leu Leu Cys Arg Leu Arg Ala Ile Gln Leu Asp Ser His
 225 230 235 240
 Ala Lys Ala Leu Asp Arg Ala Lys Lys Arg Val Thr Leu Leu Val Ala
 245 250 255
 Ala Ile Leu Ala Val Cys Leu Leu Cys Trp Thr Pro Tyr His Leu Ser
 260 265 270
 Thr Ile Val Ala Leu Thr Thr Asp Leu Pro Gln Thr Pro Leu Val Ile
 275 280 285
 Gly Ile Ser Tyr Phe Ile Thr Ser Leu Ser Tyr Ala Asn Ser Cys Leu
 290 295 300
 Asn Pro Phe Leu Tyr Ala Phe Leu Asp Asp Ser Phe Arg Arg Ser Leu
 305 310 315 320
 Arg Gln Leu Val Ser Cys Arg Ser Ala
 325

<210> 139
 <211> 987
 <212> DNA
 <213> Mouse

<400> 139
 atgcataact taacgctttt cgagctctgga ggggacaacg tgtcttgcgg cggctcatct 60
 ttgggctgtc ccaacgggtc cagcctggct cctctgccgc tgcgcagcc actggcggta 120
 gcagtgccctg tcgtctacgg ggaatttgc gccgtgggac tggctggcaa ctctgcggtg 180
 ctgtacgtac tgcctgcgcac gccgcgcatt aagactgtca ccaacgtgtt catcctcaac 240
 ctggctatcg ccgatgagct cttcaccctc gtgctgccc tcaacatcgc ggacttcctg 300
 ctgaggcgct ggcccttcgg ggaggtcatg tgcaagctca ttgtagccgt cgaccagtac 360
 aaacatttct ctaggctcta cttcctcgcc gtcattgagc cgcaccgata cctgggtggt 420
 ctggccacag cagagtcgcg ccgggtgtcc gggcgacatt acggtgcagc gcgtgctgtc 480
 agtctggcgg tctggcgctt ggtgacgtg gtctgtctgc cctttgcggt attcgctcgg 540
 ctggacgagg agcagggtcg ggcggcagtc gtgctgtct tcccgcagcc cggggccttc 600
 tgggtggcgtg ccagccgtct ctacacacta gtattgggtt ttgcatccc ggtgaccacc 660
 atctgtgtct tctataccac tctgctctgc cgactgcgtg ctatccagct agatagccac 720
 gccaaggccc tggatcgtgc caagaagcgc gtgacctgt tgggtggcggc gattctggct 780
 gtgtgtctcc tctgtctggac gccttatcac ctgagtacca tagtggccct caccaccgac 840
 ctcccgaata cgccgttgtt catcggtcat tcttacttca tcaccagcct gagctatgct 900
 aacagctgcc tcaacccttt cctctatgcc ttcctggagc acagcttccg cagaagcctc 960
 cggcaattgg tgtcatgcc tttagcc 987

<210> 140
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Probe

<400> 140
tcctctgctg gacaccgtac cacctga 27

<210> 141
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 141
atcgatatgg acaacgcctc gttctcggag cc 32

<210> 142
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 142
actagtgtca ggctgccgcg cggcaagtta tc 32

<210> 143
<211> 1000
<212> DNA
<213> Human

<400> 143
atcgatatgg acaacgcctc gttctcggag ccctggcccg ccaacgcatac gggcccgag 60
ccggcgctga gctgctccaa cgcgtcgact ctggcgccgc tggcgccgc gctggcggg 120
gctgtaccag ttgtctacgc ggtgatcigc gccgtgggtc tggcgggcaa ctccgccgtg 180
ctgtacgtgt tgcctcgggc gccccgcatg aagaccgtca ccaacctgtt catcctcaac 240
ctggccaicg ccgacgagct ctacacgtg gtgctgcca tcaacatcgc cgacttctg 300
ctcggcgagt ggccttccg ggagctcatg tgcaagctca tctgtgctat cgaccagtac 360
aacaccttct ccagcctcta ctctctacc gtcattgagc ccgaccgcta cctgggtggg 420
ttggccactg cggagtcgag ccgggtggcc ggccgcacct acagcgccgc gcgcgcggg 480
agcctggccg tgtgggggat cgtcacactc gtcgtgctgc ccttcgcagt ctccgcccg 540
ctagacgacg agcagggccg gcgccagtgc gtgctagtct ttccgcagcc cgaggccttc 600
tgggtggcgc cgagccgcct ctacacgtc gtgctgggct tcgccatccc cgtgtccacc 660
atctgtgtcc tctataccac cctgtgtgct cggctgcatg ccatgcgctt gacagccac 720
gccaaggccc tggagcgccg caagaagcgg gtgaccttcc tgggtggggc aatcctggc 780
gtgtgcttcc tctgtggac gccctaccac ctgagcaccg tgggtggcgt caccaccgac 840
ctcccgagc cggcgtgtgt catcgtatc tcctacttca tcaccagcct gagctacgc 900
aacagctgcc tcaacccctt cctctagccc ttctggagc ccagcttccg caggaaacct 960
cgccagctga taacttggc cgcggcagcc tgacactagt 1000

<210> 144
<211> 328
<212> PRT
<213> Human

<400> 144
Met Asp Asn Ala Ser Phe Ser Glu Pro Trp Pro Ala Asn Ala Ser Gly
1 5 10 15
Pro Asp Pro Ala Leu Ser Cys Ser Asn Ala Ser Thr Leu Ala Pro Leu
20 25 30
Pro Ala Pro Leu Ala Val Ala Val Pro Val Val Tyr Ala Val Ile Cys
35 40 45
Ala Val Gly Leu Ala Gly Asn Ser Ala Val Leu Tyr Val Leu Leu Arg
50 55 60
Ala Pro Arg Met Lys Thr Val Thr Asn Leu Phe Ile Leu Asn Leu Ala
65 70 75 80
Ile Ala Asp Glu Leu Phe Thr Leu Val Leu Pro Ile Asn Ile Ala Asp
85 90 95
Phe Leu Leu Arg Gln Trp Pro Phe Gly Glu Leu Met Cys Lys Leu Ile
100 105 110
Val Ala Ile Asp Gln Tyr Asn Thr Phe Ser Ser Leu Tyr Phe Leu Thr
115 120 125
Val Met Ser Ala Asp Arg Tyr Leu Val Val Leu Ala Thr Ala Glu Ser

130	Arg	Arg	Val	Ala	Gly	Arg	Thr	Tyr	Ser	Ala	Ala	Arg	Ala	Val	Ser	Leu
145	Ala	Val	Trp	Gly	Ile	Val	Thr	Leu	Val	Val	Leu	Pro	Phe	Ala	Val	Phe
	Ala	Arg	Leu	Asp	Asp	Glu	Gln	Gly	Arg	Arg	Gln	Cys	Val	Leu	Val	Phe
	Pro	Gln	Pro	Glu	Ala	Phe	Trp	Trp	Arg	Ala	Ser	Arg	Leu	Tyr	Thr	Leu
	Val	Leu	Gly	Phe	Ala	Ile	Pro	Val	Ser	Thr	Ile	Cys	Val	Leu	Tyr	Thr
	Thr	Leu	Leu	Cys	Arg	Leu	His	Ala	Met	Arg	Leu	Asp	Ser	His	Ala	Lys
225	Ala	Leu	Glu	Arg	Ala	Lys	Lys	Arg	Val	Thr	Phe	Leu	Val	Val	Ala	Ile
	Leu	Ala	Val	Cys	Leu	Leu	Cys	Trp	Thr	Pro	Tyr	His	Leu	Ser	Thr	Val
	Val	Ala	Leu	Thr	Thr	Asp	Leu	Pro	Gln	Thr	Pro	Leu	Val	Ile	Ala	Ile
	Ser	Tyr	Phe	Ile	Thr	Ser	Leu	Ser	Tyr	Ala	Asn	Ser	Cys	Leu	Asn	Pro
	Phe	Leu	Tyr	Ala	Phe	Leu	Asp	Ala	Ser	Phe	Arg	Arg	Asn	Leu	Arg	Gln
305	Leu	Ile	Thr	Cys	Arg	Ala	Ala	Ala								

<210> 145
 <211> 32
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 145
 atcgatatgg acaacgcctc gtctcggag cc 32

<210> 146
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 146
 tagaggctgg agaaggtgtt g 21

<210> 147
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 147
 catgaagacc gtcaccaacc t 21

<210> 148
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Primer

<400> 148
 ccagcgtgaa gagctcgtc 19

<210> 149
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Designed peptide

<400> 149

Trp Phe Lys His Val Ala Ser Pro Arg Tyr His Thr Val Gly Arg Ala
1 5 10 15
Ala Gly Leu Leu
20

<210> 150

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223>

<400> 150

tggttcaagc acgtggcgag tccccgctac cacacggtgg gccgcgccgc tggcctgctc 60